

# Alzheimer's disease

## Introduction

Dementia is a broad term for the deterioration of brain function resulting in memory loss, reduction in language skills and behavioural and emotional problems. Alzheimer's disease is the most common type of dementia, accounting for more than half of all cases. Alzheimer's disease is rare before the age of 60 but the risk of developing it increases with age. Around 25% of people over 80 years old have the disease.

As the population ages, the number of people with Alzheimer's disease, and other dementias, will increase.

## Underlying cause

The cause of Alzheimer's disease remains uncertain. It is likely that no single factor is responsible but that a variety of factors, which may differ from person to person. Since people whose parents or siblings develop the disease appear at greater risk of developing it themselves, there may be a genetic component. However, no straightforward pattern of inheritance has been found. It's known that head injury is a risk factor and that Alzheimer's disease often affects people with Down's Syndrome.

Some researchers have suggested that people who exercise their brains (doing crosswords and other mental agility exercises) are less likely to develop the disease. But there is no firm evidence to show that environmental factors play a part in the development of the disease.

Whatever the underlying cause, Alzheimer's disease is the result of the destruction of nerve cells (neurones) in the brain. These nerve cells cannot be replaced, so the person with Alzheimer's disease gets progressively worse as more cells are destroyed. This process causes the breakdown of the brain's communication systems. When functioning normally, the brain exchanges signals from other parts of the body, and other parts of the brain, across the gaps (synapses) that exist between nerve cells. These signals are essential for brain activity such as language and problem solving. They are also involved in controlling motor functions, such as instructing muscles when and how to work.

These message signals cross over these gaps with the help of chemicals known as 'neurotransmitters', including acetylcholine. Doctors believe that nerve cell destruction causes a reduction in acetylcholine, leading to impaired transmission of nerve signals. Drugs that boost the amount of acetylcholine are used to limit the impact of the disease.

## Symptoms and disease progression

The onset of Alzheimer's disease is often difficult to pinpoint as it starts with forgetfulness and difficulty in finding the right word, common problems associated with the ageing process.

In these early stages, those closest to the person with Alzheimer's disease may notice personality changes. For example, a previously cheerful person may become irritable and even aggressive and may no longer be able to cope with the demands of a busy life.

As the disease progresses, loss of memory, difficulty in completing simple tasks, and more overt personality changes, often combined with depression, become more evident. Mathematical and verbal skills decline, which may mean that a person is no longer able to read instructions or count their change. Conversation can become empty and meaningless. Sometimes people with Alzheimer's may become paranoid, believing, for example, that their carers are trying to poison them or that their partner is being unfaithful. The sense of time and place can also be lost, with sufferers getting dressed in the middle of night or wandering off and becoming lost, even on once-familiar territory. This can cause a great deal of stress and upset for the person's carers and family who, in effect, have lost the person they once knew.

During the late stages of the disease, people with Alzheimer's may become totally dependent upon others for their care. Walking can become difficult, confining a sufferer to bed. He or she may become incontinent, experience hallucinations and become increasingly unaware of their surroundings. It is at this stage that residential care, with round the clock nursing, is often considered.

The average duration of the disease is about ten years, with a range of between 3-20 years from diagnosis and death. Often the cause of death in a person with Alzheimers is another illness, such as pneumonia, which becomes more common in people who are bed-bound and so less resistant to infection.

## Diagnosis

There is no single test for Alzheimer's disease and diagnosis depends in part on excluding other potential causes of dementia. These include vascular dementia (often known as multi-infarct dementia or MID), dementia with Lewy bodies (DLB), fronto-temporal dementia (including Pick's disease), Parkinson's disease, and alcohol-related dementia (Koraskoff's syndrome).

In a person with suspected of having Alzheimer's, the GP will try to establish some of the symptoms such as memory loss and verbal impairment. Physical examination and blood and urine tests may be carried out to help exclude other causes of dementia. If the GP is unable to make a diagnosis, a referral will usually be made to a specialist (a neurologist, a care of the elderly physician or a psychiatrist) for more specialist tests.

These tests may include the 'Mini-Mental State Examination' (MMSE). This is a series of questions and tests looking at memory, language and mathematical skills. Other investigations may include a brain scan, typically magnetic resonance imaging (MRI). Some people may also be referred to a 'memory clinic' specialising in mental state assessments.

## Treatment for Alzheimer's disease

Unfortunately, no cure has yet been found for Alzheimer's disease. However the disease can be managed with drug treatment, non-drug treatment and support from a range of services.

### Drug treatment

The introduction of a new class of drugs called 'cholinesterase inhibitors' is the first time there has been an effective drug treatment for Alzheimer's. Cholinesterase breaks down and destroys acetylcholine, the neurotransmitting chemical. Cholinesterase inhibitors help to prevent this breakdown and so promote a more plentiful supply of acetylcholine. There are three drugs available in this class: Aricept (donepezil hydrochloride), Exelon (rivastigmine) and Reminyl (galantamine). In people in the early to middle stages of the disease, they may slow down the progression of symptoms.

Sometimes anti-depressants are prescribed to help treat the depression that can be associated with Alzheimer's disease. The inappropriate prescribing of potent psychiatric drugs (neuroleptics) used to manage 'challenging behaviour', of people in residential care, has been recognised and criticised.

### Non-drug treatment

There are other techniques for helping to cope with Alzheimer's disease. These include techniques known as 'reality orientation', 'reminiscence therapy' and 'validation therapy'. Art and music therapies are also used, but their effectiveness is not proven.

### Services

Help and support in terms of respite care (giving carers a break), social services and residential care is an important part of the overall care of someone with Alzheimer's disease.

### Further information

#### Alzheimers Disease Society

Helpline: Tel: 0845 300 0336  
E-mail: [info@alzheimers.org.uk](mailto:info@alzheimers.org.uk)  
Website: <http://www.alzheimers.org.uk/>

#### Alzheimers Research Trust

E-mail: [azt@btinternet.com](mailto:azt@btinternet.com)  
<http://www.alzheimers-research.co.uk>

#### Alzheimer's Association (USA)

<http://www.alz.org>

#### National Institute of Neurological Disorders and Stroke

[http://www.ninds.nih.gov/health\\_and\\_medical/disorders/alzheimersdisease\\_doc.htm](http://www.ninds.nih.gov/health_and_medical/disorders/alzheimersdisease_doc.htm)

#### Alzheimer's Association of NSW

<http://www.alznsw.asn.au>

#### Healthwise (Health Information Resource Centre)

Tel : (852) 2849 2400  
Fax : (852) 2849 2900  
Email : [info@healthwise.org.hk](mailto:info@healthwise.org.hk)  
Homepage : [www.healthwise.org.hk](http://www.healthwise.org.hk)

*This leaflet is for information only. For a detailed opinion or personal advice, please consult your own doctor.  
Alzheimer's circ.doc*

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